INDIAN INSTITUTE OF TEACHER EDUCATION
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ભાવપત્રક મેળવવા અંગે.

આઈ.આઈ.ટી.ઈ. સેન્ટર ઓફ એજ્યુકેશન, ગાંધીનગરની ફિઝિક્સ, કેમેસ્ટ્રી તથા લાઇફ સાયન્સ લેબોરેટરીમાં કેમિકલ, કોમ્પોનન્ટસ, ગ્લાસવેર તથા ઇન્સ્ટ્રૂમેન્ટ્સની ખરીદી માટેના ભાવ આમંત્રિત કરવામાં આવે છે. ભાવપત્રક મોકલવાની વિગતો આઈ.આઈ.ટી.ઈ.ની વેબસાઇટ www.iite.ac.in પરથી જોવાની રહેશે, બંધ કવરમાં ભાવપત્રક તા.૦૭/૦૯/૨૦૨૩ (૪:૦૦ Hrs) થી તા.૧૬/૦૯/૨૦૨૩ (4:00 Hrs) સુધીમાં ભરીને આઈ.આઈ.ટી.ઈ. ખાતે પહોચાડવાના રહેશે. ભાવપત્રક સાથે ઇન્સ્ટ્રૂમેન્ટ્સ ના catalogue આપવાના રહેશે.

સ્થળ:- ગાંધીનગર — કુલસચિવ
તારીખ:-૦૭-૦૯ -૨૦૨૩ — આઈ.આઈ.ટી.ઈ.

Physics Lab Requirement

- **Required specifications are given below.**
- **The requisite chemicals are needed in pure form since any impurities in them will drastically modify their properties. Hence, we prefer these chemicals (item No. 1 to 19) are from any one of following company.**

1. **Hi – Media**
2. **Merck**
3. **Singma Aldrich**
4. **Alfa Aesar**

- **For item number 24,27,44 to 65 must mention following details in your quotation. And for other items write all specifications of item that you are sending. If not mentioned than quotation will not be accepted.**
  1. **Company name**
  2. **Model number**
  3. **Catalogue of that item (attach xerox with quotation)**
- **Kindly send the quotation (Hard copy) of above chemicals/equipment and components as per mentioned address and date(time) in newspaper advertisement.**

  Kindly mention name on envelope: Centre of Education (Physics), IITE

1. List Of Chemicals

Sr. No.	Chemicals	Specification	Quantity
1	Aceton	5 L	1
2	Copper Sulphate ($CuSO_4$)	500 gm	1
3	Purity GLACIAL ACETIC ACID	2.5 L	1
4	Potassium Dihydrogen Orthophosphate	500 gm	1
5	CCl4 (Carbon tetrachloride)	500 ml	1
6	$FeCl_3$ (Iron Chloride)	500 gm	1
7	$KMnO_4$ (Potassium permanganate)	500 gm	1
8	Methanol	5 L	1
9	$CuCl_2 \cdot 2H_2O$ (Copper (II) chloride dihydrate)	250 gm	1
10	$ZnCl_2$ (Zinc chloride)	250 gm	1
11	$SnCl_2 \cdot 2H_2O$ (Stannous Chloride, dihydrate)	250 gm	1
12	Thiourea ($SC(NH_2)_2$)	250 gm	1
13	$Na_2S \cdot 9H_2O$ (sodium sulphide)	250 gm	1
14	$Zn(C_5H_7O_2)_2 \cdot H_2O$ (Zinc acetylacetonate hydrate)	250 gm	1
15	DMSO (Dimethyl Sulfoxide)	5 L	1
16	ethylene glycol (EG)	5 L	1
17	CH_3CSNH_2 (Thioacetamide)	250 gm	1
18	$SnCl_2 \cdot 5H_2O$ (Tin (IV) chloride pentahydrate)	250 gm	1
19	$Cd(CH_3COO)_2 \cdot 2H_2O$ (Cadmium acetate)	250 gm	1

2. List Of Instruments, Components and Glassware

Sr. No.	Equipment/component	Specification	Quantity
20	Silica crucible	Use: Chemical Laboratory Material: Silica Colour: White Temp. Range: 0 to 1000 degree Celsius	2
21	Nitrile gloves	1 box	1
22	Magnetic beads for stirring	Use: Laboratory Length: 30 mm Colour: White Material: Teflon Shape: Round	2 Packet
23	Glass beaker	Use: Laboratory Capacity: 100ML Material: Borosilicate Glass Colour: Transparent	4
24	Ultrasonic Bath Sonicator (Ultrasonic Cleaner)	Body Material: Stainless steel Display Mode: Digital Capacity: 2L Ultrasonic Frequency: 40khz Ultrasonic Power: 120w Heating Power: 100w Operating Voltage: 200-240V/50Hz Time Setting: 1-30 minutes adjustable Heating: 0-80 degree Celsius adjustable	1
25	Glass beaker	Use: Laboratory Capacity: 250ML Material: Borosilicate Glass Colour: Transparent	2
26	pestle or mortars - soil sample grinder	Use: Chemical Laboratory Material: Porcelain Colour: White Inner diameter: 3 Inch Thickness: 75mm	2

27	Microwave Oven	Oven capacity: 30L Operation frequency: 2450Mhz Outside dimensions: 63 X 48 X 36 CM Power: 230v-50Hz, 900watt Stainless steel cavity and LED display clock with timer with turntable	1
28	Dropper	Use: Laboratory Capacity: 20ML & 50ML Material: Borosilicate Glass Colour: Transparent	20ML-10 50ML-10
29	Glass Bottle with cover	Use: Laboratory Capacity: 250ML Material: Borosilicate Glass Colour: Transparent	10
30	Glass Road	Use: Laboratory Size: 20cm Material: Borosilicate Glass Colour: Transparent	5
31	funnel	Use: Laboratory Diameter: 100mm Material: Borosilicate Glass Colour: Transparent	5
32	funnel stand	Use: Laboratory Size: must fits 100MM diameter funnel Material: Metal	5
33	filter paper	Use: Laboratory Diameter: 11cm Shape: Round	5 packets
34	Petri Dish	Use: Laboratory Diameter: 5cm & 8cm Material: Borosilicate Glass Colour: Transparent	5cm- 20 8cm- 20
35	Glass Bottle with cover	Use: Laboratory Capacity: 100ML Material: Borosilicate Glass Colour: Transparent	5
36	741 opamp ic	Ic type: Dual-in-line Package (DIP)	25
37	555 timer ic	Ic type: Dual-in-line Package (DIP)	25
38	SL100 (Transistor)	-	25
39	7400 IC (NAND GATE)	Ic type: Dual-in-line Package (DIP)	25

40	7473 IC (J-K FLIP FLOP)	Ic type: Dual-in-line Package (DIP)	25
41	IRFZ44N (MOSFET)	-	25
42	BFW10 (FET)	-	25
43	soldering iron 25W	Input: 240 V AC Tip: pointed	2
44	Stefans's Constant apparatus (electrical method) kit	Mounted on kit 1. Analog meters: voltmeter 12V DC and ammeter 250mA DC 2. Power supply IC regulated 0-12V DC, 250mA / operated on mains power 230V, 50Hz 3. Component mounted on panels are: Bulb 12V, 250mA and voltage control through Potentiometer	2
45	Zener Diode as a Voltage Regulator Apparatus kit	Mounted on kit 1. Built in regulated power supply 0-25V/150mA required for forward and reverse. 2. 3 different values of Zener connected on the panel via 4mm sockets. 3. Fixed load resistor mounted on the panel. 4. Operated on Mains power 230V, 50Hz.	2
46	To study characteristics of half wave and full wave rectifiers Apparatus kit	Mounted on kit 1. Analog Meters: Voltmeter 30V AC., Ammeter 250mA DC., Voltmeter 30V DC. 2. Power Supplies: AC Isolated Power Supply 12-0-12 VAC, 150mA. / Operated on Mains power 230V, 50Hz 3. Components are mounted on the panels are: Diode 1N4007 / Capacitors 1000uF and 100uF Controlled by Switches. / Inductor 200mH / Load Resistor through Rotary Switch	2
47	To study the drain characteristics of Dual gate MOSFET Apparatus kit	The board consists of following built-in parts: 1. 0-15V D.C. at 50mA, continuously variable regulated Power Supply. 2. 0-4V D.C. at 10mA, continuously variable regulated Power Supply. 3. 03 0-1V D.C. at 10mA, continuously variable regulated Power Supply.	2

		4. 04 Digital DC Voltmeter 3½ Digit range of 0 - 20V. 5. Digital DC Ammeter 3½ Digit range of 0 - 20mA. 6. 06 Metal Oxide Semiconductor Field Effect Transistor (MOSFET). 7. 07 Adequate no. of other electronic components. 8. Mains ON/OFF switch, Fuse and Jewel light. 9. The unit is operative on 230VAC ±10% at 50Hz. 10. Patch cord 4mm length 50 cm Red & Black 09	
48	PIEZO ELECTRIC TRANSDUCER TRAINER kit	Mounted on kit 1. Digital Meters: Voltmeter 200mV DC. 2. Power Supplies: DC Supply IC Regulated +12V DC, 150mA. / DC Supply IC Regulated +5V DC, 150mA. / Operated on Mains power 230V, 50Hz 3. Components are mounted on the panels are: Variable Resistor (Presets) / 741 IC / Piezo Electric Sensor.	1
49	ULTRASONIC DISTANCE MEASUREMENT TRAINER kit	Mounted on kit 1. Power Supplies: DC Supply 9V DC, 150mA. / Operated on Mains power 230V, 50Hz +10% 2. Meters: LCD Display 16x2 (Green Display) 3. Components are mounted on the panels are: Ultrasonic (Transmitter) / Ultrasonic Receive	1
50	Study of LVDT Apparatus Kit	Mounted on kit 1. Power Supplies: DC Dual Power Supply IC Regulated +12V DC, 150mA. / Operated on Mains power 230V, 50Hz +10% 2. Digital Meters: Voltmeter 200mV (Distance in mV) 3. Audio Function Generator:4KHz fixed Sine wave Oscillator having amplitude 0-10V (P-P). 4. Components are mounted on the panels are: Resistors / Capacitors / IC 741 / Variable Resistor for Gain and Zero Setting / O/P Provided on Test Points for	1

		Monitoring & Controlling. / LVDT Sensor Mounted on External Base with Output Carrying out through 9 Pin D Connector	
51	Audio Frequency Function Generator Signal Generator (0 - 100KHz)	**WAVE SHAPE:** Sine Wave Square Wave Triangular waves selectable using band switch. **FREQUENCY RANGE:** 1 Hz to 100 KHz settable using fine & coarse controls **ACCURACY:** ±3 % on all ranges, Amplitude for wave output: 0.2,2 and 10 V P/P. operated on 230V, 50 Hz 10%	1
52	4 MM banana sockets (FEMALE)	 RED: 25 BLACK: 25	RED: 25 BLACK : 25
53	4 MM banana plugs (MALE)	 RED: 175 BLACK: 175	RED: 175 BLACK : 175
54	flexible wire 90M	size: 32/40 colour: Red & Black material: Copper	1
55	STRAIN GAUGE TRANSDUCER TRAINER kit	Mounted on kit 1. Power Supplies: DC Dual Power Supply IC Regulated +5V DC, 150mA. / Operated on Mains power 230V, 50Hz +10% ATION 2. Digital Meters: Voltmeter 200mV (Weights in mV) 3. Components are mounted on the panels are: Resistors Capacitors IC AD620 / Variable Resistor for Gain and Zero Setting / Bridge Circuit on Board. / O/P Provided on Test Points for Monitoring & Controlling / Weight Box for Weight Measurement. / Strain Sensor Mounted	1

		on External Base with Output Carrying out through 9 Pin	
56	young modulus by Searle's method kit	The Set up consists of: 01 - Searle's Apparatus. It consists of three 30 cm long wires under test, connected with two brass rods about 30 cm long at their mid points by two screws. The rods are suspended from hooks fitted on a rigid metallic support. 02 - Screw Gauge. 03 - Vernier Calliper 04 – stop watch 05 - Thread: 1 Meter 06 - Weight: 5.6 Kg. (Approx. 06 Strongly supported by detailed Operating Instructions,	1
57	To study characteristic of RC circuit kit	1. Power Supplies: • DC Supply 0-12V DC, 150mA. • Operated on Mains power 230V, 50HZ +10% 2. Digital Meters: Ammeter 2mA DC. • Voltmeter 10V DC. Components are mounted on the panels are: • 3 Capacitors • 3 Resistors Voltage Control through Potentiometer.	1
58	To study response curve of LCR circuit kit	1. **Objective:** To Plot Frequency Vs. Current Characteristics of LCR circuit when connected in series or in parallel. 2. **Features:** Instrument comprises of 3 Resistances, 3 Capacitors & 1 Inductance connected inside & connections brought out at Sockets. 2 AC moving coil meters to measure voltage & current.	1

59	to determine poison ratio of rubber tube kit	The Complete Experimental Set-up consists of following items: 1. **Poisson's ratio experimental setup –** 1.1 Rubber tube: A rubber tube about one meter long and approx 4cm in diameter is suspended vertically in a metal stand. 1.2 Rubber stopper with a hole 1.3 Meter scale 30cm 1.4 Burette 25ml (or a graduated cylinder) 1.5 Small pointer 2. Slotted Weights 500gm x 4 = 2000gm with hanger 500gm (Total 2500gm). 3. Vernier caliper	1
60	To find out resolving power of telescope kit	1. **READING TELESCOPE STANDARD:** Designed for general laboratory work. The telescope is mounted on robust steel pillar 18" long fitted on heavy metal base with leveling screws. With the help of two micrometer screws the Telescope can be precisely positioned in the vertical or Horizontal Planes. It is fitted with achromatic objective and is focussed by rack and pinion arrangement. It has a focal range from 0 to infinity. 2. **ATTACHMENT FOR RESOLVING Power of Telescope**: Drum type for direct reading. 3. 03 Number of patterns on glass with stand: Equidistant black and white stripes with a separation of 0.5mm, 1mm & 2.5mm. Mounted on glass stand size 6" x 4" with stand. 4. 04 Lamp House 100W with house on Heavy duty stand 05 Inch tape: 5 meter. 06 Yellow / orange Lance with Holder on Sq. stand.	1
61	E BY M THOMSON EXPERMENT SETUP (BAR MAGENT SETUP) kit	**Cathode Ray Tube Distance Between Plates :** d=1.4cm **Length of Plates :** l=3.23cm **Distance Between Screen & Plates (Edge) :** L=14.5cm **Focusing Voltage :** Variable 0-300V DC **Intensity Adjustment Voltage :** Variable 0-60V DC **Deflection Voltage :** Variable 0- 50V	1

		Scale : 0-30cm Each Side **CRT Connection :** Octal Socket **Digital Meter :** 3 ½ Digit (LED Display) **Deflection Magnetometer :** 0 to 90° **Mains :** 230V AC ±10%, 50Hz **Fuse :** 500Ma **Salient Features :** • DC Power Supply instrument for CRT • LED to measure deflection voltage • Focusing adjustment provided • Intensity adjustment provided • Cathode Ray Tube mounting on acrylic stand • Deflection magnetometer provided • Octal socket provided on the front panel of power supply for connecting CRT	
62	TEMPERATURE TRANSDUCER TRAINER kit (thermistor, thermocouple and RTD)	**1. Digital Meters:** • Voltmeter 200mV DC. Power Supplies: • DC Supply IC Regulated +12V, +5V DC, 150mA. • Operated on Mains power 230V, 50Hz +10% **2. Components are mounted on the panels are:** AD590 as Sensor with Probe • Variable Resistor • 741 IC • Electrical Kettle as Heating Element. • Thermometer SALIENT FEATURES: • Front panel built with high class insulated Printed Circuit Board sheet with well printed circuits and symbols. • Fuse for Short Circuit protection • Instruction manual. • Connections are brought out through 2mm Coloured Sockets. Patch Cords 2mm. • The trainer is housed in ABS Plastic cabinet. • Size of the trainer set 12"x8"	1
63	PRESSURE TRANSDUCER TRAINER kit	**1. Digital Meters:** • Digital Voltmeter: 0 to 10V Power Supplies:	1

		• DC Supply: Built in IC regulated power supplies • Operated on Mains power 230V, 50Hz +10% **2. Specifications** Pressure tank with drain valve, Digital pressure sensor • 4-20mA Current output with meter Air foot pump • Digital Indicator for pressure measurement. • Output: terminals to measure mA • Enclosure: power coated M.S Box with all necessary I/p & O/p terminals. • Pressure range: 0-10 Kg/cm2 GENERATION EQUIPMENT • Output Linear: 4-20 mA Bundle Contents • Pressure Measurement kit • Air Foot Pump • Pressure Chamber Patch Chords Power Cable Manual	
64	Milkan oil drop Experiment kit	**1. Apparatus Supply** • Millikan's Oil Drop Apparatus • Power Supply for Millikan's Apparatus • Working manual **2. Technical Specifications** • Stable triangular base that supports the main steel pillar on which lamp house, condenser, microscope and atomizer system is mounted. • Lamp house encloses a 6volt 21watt lamp and a condenser lens to focus the bright light on the oil drops. It can be adjusted in the horizontal plain by a slow motion screw. • Microscope is mounted on the opposite side of the lamp house. It is mounted with rough and fine slow motions. It can be roughly moved in the horizontal plain as well as can be moved gradually by a spring loaded slow motion screw. It can also be moved in vertical plain by a fine motion screw. Focusing is done by rack & pinion arrangement. By all these motions it becomes very easy to bring	1

		the charged oil drops on the vertical micrometer scale provided near the eye piece. • Condenser plates are made of brass mounted at the top of the central pillar insulated from the rest of the apparatus. Top plate has a small hole through which sprayed oil drops enter into the condenser chamber, separated by a distance of approx 6 to 7mm. and are also provided with terminals for power supply • Atomizer is made of an aluminum box containing olive oil mounted on a steel rod.	
65	To determine the young modulus by optical lever method kit	1. Material: Black Aluminum alloy 2. Traveling microscope Magnification:10 X Micrometer travel:25 mm Least Count:0.01 mm 3. Weight hangers with weights Material: Brass Weights:100 gm & 50 gm Quantity:2 Sets each 4. Meter scale with rigid base Length :1000 mm Least Count:1 mm 5. Sample test plates Material: Brass, Aluminium, Stainless steel, PMMA Dimension:500 x 50 x 2 mm 6. User manual	1